

ABSTRACT OF THE DISCLOSURE

A mold apparatus and method for manufacturing panels having, as desired, one or more areas of reduced material comprising a facing sheet and integrally attached cell forming walls extending in roughly perpendicular fashion from the facing sheet. Additionally, a method for molding panels, including large scale panels, from thermoplastic resins and other moldable materials requiring significantly less energy than other known molding methods, and providing for panels having one or more areas exhibiting continuous outer surfaces on all dimensions. A lower negative mold member has a plurality of upwardly facing positive standoffs defining interstitial channels into which thermoplastic resin or other moldable material is filled. A generally planar upper mold member is placed on the lower mold, and the combined mold assembly is then subjected to elevated heat and pressure, allowing said thermoplastic resin or other moldable material to melt within the interstitial spaces of the lower mold member. After cooling, upper and lower mold members are separated, and a molded panel structure is removed therefrom.